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Southwestern MEDICINE

VOL. XXXVIII JANUARY, 1957 No. 1

EDITORIAL

Inventory Time

By Robert B. Homan, Jr., M. D., El Paso

At this time, the end of an old and the beginning of a new year, it is customary to "take stock" — to review the events of the past and to make plans for the future. Some go so far as to make "resolutions" — what they will or will not do next year. It might benefit the profession if all of us would do a little reviewing and planning on our own part.

The past year has seen a continued phenomenal growth of voluntary health insurance, the advent of Medicare, extreme changes in the social security system — including the controversial disability program, continued battling over hospital-physician relations, a turmoil at the higher levels over a new code of medical ethics, etc. We find government more and more dominating the practice of medicine. A new congress this month will undoubtedly come forth with other bills designed "to give more adequate medical care to all of the people" — to quote the social planners. Most certainly government "re- insurance" of private insurance companies will again be an issue in Congress and will have administration backing. Compulsory social security for physicians will also be a "must" for the do-gooders.

Cautious Look

Before we become too involved in these matters, perhaps a cautious look at ourselves is not out of order. In his presidential address to the North Central Medical Conference, Dr. P. H. Woutat, of North Dakota, presented his version of "the 1956 requirements" of the so-called ideal physician. They will do for 1957, also.

"The ideal physician must, of course, be of fine and scholarly appearance, with great intellectual capacity, of faultless personal habits, and inspire the confidence of his patients and the respect of all others.

"He must be active in community affairs, taking his full part in Chamber of Commerce and service club functions, serve on and advise municipal and other governmental bodies as called upon, be active in local and state political affairs, be a good church worker and attend church frequently.

"He must be available on short notice for papers to local PTA and church groups, service and business girl's clubs, and all other groups and organizations interested in obtaining reliable information on medical subjects. He must, of course, take an active part in the various youth programs of the community.

Cheerful Contributor

"He must work on and contribute liberally and cheerfully to fund raising campaigns for new hospitals, YM and YWCAs, old peoples homes and nursing homes, give liberal support to the church and the community chest and help defray the deficit of the local ball club.

"He must be active in his local and state medical societies, attend meetings regularly, and accept officership and committee assignments eagerly and perform his duties quickly and with great tact and diplomacy.

"He must be faithful in attendance at hospital staff meetings, be ready to give carefully prepared scientific papers, serve on hospital committees cheerfully and efficiently, keep his hospital records complete in all details, and be prompt with carefully prepared lectures to the student nurses.

"He must be a good family man with a gracious and tactful wife who abhors mink coats and other vulgar extravagancies, and must spend lots of time at home with his children.

Tireless Worker

"But above all this, he must never fail to give his patients the finest possible medical service, keeping abreast of medical progress by reading, attendance at medical meetings, and taking frequent post-graduate courses. He must be a tireless worker and improve his public relations by spending adequate time with his patients, answering urgent calls promptly, day or night, and by not keeping his patients waiting. This must all most certainly be done for what has been vaguely defined as a reasonable fee."

On this basis, doctor, how is your inventory?

Surveys reveal that an American loves his *own* doctor, believes him ethical, honest, competent medically and surgically, and believes him to be a good citizen in his community. On the other hand, the same surveys reveal that Americans do not have the same faith in the medical profession as a whole. Could this be so because too few doctors approach Dr. Woutat's "ideal"? Or could it be because of bickering among ourselves? Or could it be the result of the planned campaign of the socializers to discredit the profession. Now is the time to "take stock."

(1) As quoted by George F. Lull, M. D. — Secretary's Letter AMA — Chicago Letter No. 383 — Nov. 23, 1956.

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CURRENT THERAPY

Clinical Use of Radioactive Cobalt ^{60}

By Robert F. Boverie, M. D., Gordon L. Black, M. D., and Ralph S. Clayton, M. D., El Paso*

Treatment of patients with cancer by radiation methods developed rapidly after the discovery of X-rays. But, because of the weakness of the X-ray beams produced by the early X-ray machines, only lesions of the skin could be effectively treated. The treatment of deeper lesions was made possible after the discovery of radium and the development of more powerful X-ray generators.

From the nuclear reactors, developed during World War II, have come several medically important radioactive isotopes in large quantities. Some of these give up their radiation over short periods and can therefore be safely introduced into the general body circulation. For example, Radioactive Iodine (I^{131}) may be taken by mouth, and is concentrated in the thyroid gland providing a convenient, practical method of treating hyperthyroidism and the metastases of cancer of the thyroid if the metastases will concentrate iodine.

Radioactive phosphorus (P^{32}) is a useful source of radiation for treatment of some cases of polycythemia rubra vera, leukemia and metastases of certain types of cancer. This is made feasible because of the increased utilization of phosphorus by rapidly growing tissues.

Radioactive Gold

Radioactive gold (AU^{198}) in a colloidal suspension may be injected into the pleural or peritoneal cavities to reduce the rapid accumulation of effusions due to malignant implants on pleural or peritoneal surfaces.

In addition to these radioactive isotopes which can be left in the body, there are radioactive isotopes which can only be used by placing them in body cavities or solid structures of the body for a predetermined time and then removing them. Radioactive cobalt (Co^{60}) has been used widely in this manner as interstitial needles for implanting malignancies, especially of the mouth, tongue, bladder, and metastases to lymph nodes in the neck. It has also proven useful in capsules in treatment of cancer of the endometrium pre-operatively, and as the primary treatment of cancer of the cervix uteri.

Radium sources have been used successfully with these methods in the past, but because Co^{60} is less expensive, sufficient sources of various strengths and sizes can be purchased more economically, thus providing greater flexibility in clinical use.

Beam Therapy

Another way of treating tumors is by "beam therapy," sometimes called teletherapy. This amounts to exposing a tumor to a beam of irradiation produced at some distance from the patient. Since large amounts of radioactive cobalt are now available from the nuclear reactors, Co^{60} can be obtained in sufficient quantity to provide intense beams of radiation. The principles involved are no different from those used for many years with conventional X-ray therapy.

The primary objective in treatment of a tumor by radiation therapy is to deliver a predetermined number of roentgens to the tumor. By careful planning, this can be done with conventional deep X-ray therapy by the use of multiple fields of treatment from several different angles. A second equally important objective in treatment with irradiation is to treat as little normal tissue as possible. It is in this regard that treatment by radioactive cobalt beam therapy provides advantages, as compared to treatment by conventional deep X-ray equipment.

The maximum dose of radiation occurs below the skin when radioactive Cobalt is used. This allows large doses of radiation to be given to deeply situated tumors without producing troublesome skin reactions. Further sparing of the skin is achieved if rotational, pendulum or multiple field therapy is used.

Radiation Dose

The dose of radiation is considerably greater at a particular depth with radioactive cobalt beam therapy, which means that the total amount of irradiation given the patient can be decreased. Thus again, less irradiation is given to normal tissues. Since there is a decrease in the total absorption of irradiation, there are fewer patients who have undesirable constitutional effects, i.e., nausea, vomiting, and leukopenia.

Another difference is that with radioactive cobalt therapy, there is less absorption by bone and cartilage, as compared to conventional deep X-ray therapy. This primarily will reduce the risk of necrosis of bone and cartilage located near a tumor, but will also allow a greater amount of radiation to reach the tumor when it is situated beneath bony structures.

It has been possible in the past, with conventional deep X-ray therapy, to treat the great majority of patients without having to hospitalize them. Because of the decrease in undesirable side reactions in patients treated with Co^{60}, there is a still greater re-

(Continued on Page 59)

*Drs. Boverie, Black and Clayton this month are substituting for Dr. Jack A. Bernard, regular conductor of this section.

Edited by Andrew M. Babey, M. D., Las Cruces, N. M.

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

(continued)

38. "It is now scarcely possible for a man to acquire slowly the sort of wisdom which in former times caused 'elders' to be respected, because the lessons of experience become out of date as fast as they are learnt. Science, while it has enormously accelerated outward change, has not yet found any way of hastening psychological change, especially where the unconscious and subconscious are concerned. Few men's unconscious feels at home except in conditions very similar to those which prevailed when they were children." Bertrand Russell; *loc. cit.,* P. 1310.

39. "I have seen meningitis develop at all stages between one day and 10 days after fractures of the anterior fossa involving the paranasal sinuses, with tearing of the overlying dura. Thus no one with an unclosed dural tear over a fractured ethmoid or frontal sinus can be regarded as safe from this risk. The meningitis, usually pneumococcal, may follow a cold in the head, but often it comes when the sinuses are not infected." Sir Hugh Cairns; *British Medical Journal;* June 4, 1949; P. 973.

40. "If leakage of large volumes of air persists after intrapleural suction has been instituted in a patient with a severe thoracic injury, the diagnosis of a ruptured bronchus must be strongly suspected." F. Henry Ellis, Jr., *Staff Meetings of Mayo Clinic;* June 29, 1955; P. 274.

Blood Supply

41. "There should be no concern regarding the blood supply to the distal end of a divided bronchus in spite of the fact that the bronchial arteries are severed by such an injury. It is extremely difficult to deprive the bronchi of the systemic arterial supply because of the numerous collateral vessels that exist." F. H. Ellis, Jr., *loc. cit.,* P. 275

42. "The mediastinal spaces are in constant motion from the surrounding vessels and moving pleura, rendering the presence of infection especially hazardous." F. H. Ellis, Jr., *loc. cit.,* P. 293.

43. "The absence of joint manifestations, skin manifestations and confirmatory laboratory evidence, i. e., a normal sedimentation rate and a normal antistreptolysin titre does not deny the presence of rheumatic carditis in our experience. It is more accurate to state that those manifestations which are considered classical for rheumatic fever when present at the early stage of the disease may yet disappear while protracted rheumatic carditis continues." Sister Mary Yassunta, *Bulletin of the St. Francis Hosp. & Sanatorium;* January 1954, P. 42.

44. "Morphine is relatively ineffective when given by mouth; the analgesia from gr. 1/6 orally is less than that from gr. 10 of aspirin." "Leading Articles"; *The Lancet;* July 2, 1955; P. 26.

45. "Oliver Cromwell's advice to his zealots: 'Gentlemen, I beseech you by the bowels of Christ to remember for just one moment that you may be wrong.' " Quoted by Alan Gregg; *Texas Reports on Biology and Medicine;* Vol. II; 1953; P. 444.

Besetting Sins

46. "Since doctors so often live by patients' confidence, and confidence is the natural child of prestige, the besetting sins of many a doctor become prestige hunting, professional jealousy, and nursing self-pity. Watch out for these, keeping in mind the mellow Chinese proverb that observes 'Great men never feel great: small men never feel small.' " Alan Gregg; *Tex. Reports on Biol. & Med.;* Vol. II; 1953; P. 445.

47. "At the bedside of disease, patients do not want and do not need to be attended by mere Quiz Kids — persons as miraculous mentally as they are immature in every other way. That is what I mean when I say there are plenty of M. D.'s in this world but not enough real doctors. In the effort to take the world as a real place and not evade its reality you may on occasion find wisdom in the art of timing, in taking advantage of the fact that life ebbs and flows, that the work of the world, like the work of the heart goes on by means of diastole as well as systole." Gregg; *loc. cit.,* P. 445.

48. "Never underestimate your need for the company and the companionship of men who want to learn. And above all have the grace to admit that you can learn. Charles Darwin once observed that in his experience men differed more in the degree to which they used their abilities than in the sum total of their abilities." Gregg; *loc. cit.,* P. 446.

49. "When anxiety is very severe it overflows into the muscular system, with the production of gross motor restlessness, and it is then termed 'agitation.' Agitation is always a symptom of an illness of a serious kind, and most patients referred urgently with a diagnosis of 'acute anxiety state' are in fact suffering from a depression. Self-reproach and hopelessness about the future will usually be in evidence." Gerald Garmany; *British Medical Journal;* July 9, 1955; P. 115.

Hysterical Blindness

50. "Hysterical blindness shows the triad of a

sudden onset, normal fundi, and normal pupillary reactions. Hysterical aphonia soon gives way to whispering, which is more convenient for the patient, and it may be observed to be selective and pitched so that it causes maximum irritation while permitting social or therapeutic exchanges." Gerald Garmany; *loc. cit.*, P. 116.

51. "Stupor is found, when it is found at all, in chronic and practised hysterics, and it can cause anxiety from the diagnostic point of view to the most experienced observer. The patient may lie flaccid and as if in coma, with a total absence of psychologically understandable responses to stimuli as the usual definition of coma requires. It is called stupor rather than coma, because there is good evidence — usually retrospective — that awareness has not been suspended. Nevertheless the dissociation of function is so well established that there may be no response to pinches, sharp needles, or any other stimulus which it would be acceptable to apply. There is one common but not invariable sign which should be looked for since it gives the diagnosis, and that is a slight rapid fluttering of the eyelids." Gerald Garmany; *loc. cit.*, P. 117.

52. "Rupture of the small intestine rarely causes free air beneath the diaphragm, especially if the perforation is due to acute trauma. Of 19 cases of rupture from nonpenetrating abdominal injuries reported by Jacobson and Carter only two showed pneumoperitoneum. Many patients had no x-ray signs of injury despite gross perforation and peritonitis." John E. Gary & Richard Schatzki; *New England Journal of Medicine;* Dec. 30, 1954; P. 1097.

"POINTERS"

From the Case Records of the Massachusetts General Hospital 1952*

(continued)

13. "Massive peripheral thrombosis without any peripheral edema is possible." A composite; *loc. cit.;* p. 749

14. "I think it was well stated recently that 'the steroid hormones have the ability to mask all signs except those of death.'" *loc. cit.;* p. 789

15. "Although temporary benefits may occur, relatively few of these (chronic cardiac) patients can be brought back into balance for any appreciable length of time by juggling their electrolytes. It is a somewhat discouraging situation to deal with from a practical angle." *loc. cit.;* p. 908

16. "We are all aware that it is difficult to be certain of expansile pulsation. Even the conventional test that we teach the second-year students of placing the hands on the sides of the pulsating mass and watching for them to be separated is not always accurate. When a rounded tumor or a mass of any shape lying on the aorta is pushed anteriorly, the dome of the tumor impinging on the hands gives an expansile character to the pulsation." *loc. cit.;* p. 944

17. "We must consider three possible causes for the appearance of a loud apical systolic murmur after cardiac infarction: (1) rupture of the septum, (2) rupture of a papillary muscle, and (3) mitral regurgitation associated with increasing dilatation of the heart terminally." A composite. *loc. cit.;* p. 832

Pulmonary Emboli

18. "Small pulmonary emboli may be released for years from an occult thrombophlebitis of the legs and ultimately cause fatal cor pulmonale. The history may be quite obscure and not rouse suspicion of embolization." A composite; *loc. cit.;* p. 67 N. E. J. of Med.; July 3, 1952

19. "Dr. Bland and I have several such cases most of which had been called Ayerza's disease but which are really due to emboli, not thrombi or endarteritis. In their experimental work Muirhead, in Texas, and Wartman, in Chicago, have also shown that emboli can produce the picture of arteriosclerosis in the pulmonary vessels." *loc. cit.;* p. 68

20. "I think the great variance of the percentage of patients with myeloma who have or not have Bence-Jones protein is correlated directly with the industry of the persons assigned to look for the Bence-Jones protein. I do not say that Bence-Jones protein occurs in all patients, but I do think it will be found in a high percentage of patients if adequately looked for." *loc. cit.;* p. 71

21. "A form of pyelonephritis, the so-called necrotizing papillitis. This type of renal disease is seen most often in diabetic persons, but in about a third of the cases it occurs in patients without diabetes; in these cases it is almost always associated with an obstruction of the urinary tract . . . Patients with necrotizing papillitis develop it very rapidly, have high white-cell counts, often have high fevers and usually die within a month." *loc. cit.;* p. 104

Raynaud's Phenomena

22. "Raynaud's phenomena may be a preliminary of any kind of disease compressing or constructing the arteries like scleroderma or dermatomyositis . . . a number of times I, and other surgeons, have done sympathectomies on persons who appeared to have Raynaud's disease only to find that they progressed to scleroderma. Under these circumstances operation has either made the condition worse or produced no improvement." *loc. cit.;* p. 137

(To Be Continued)

*We are grateful to Dr. Benjamin Castleman, Editor of "Case Records" and Dr. Joseph Garland, Editor of "The New England Journal of Medicine" for permission to publish these excerpts. They will appear regularly and cover the years 1951 through 1955. — Andrew M. Babey, M. D.

Index To Dr. Andrew M. Babey's Aphorisms

Because of the widespread interest in Dr. Babey's Collections of Aphorisms and Memorabilia, the editors of SOUTHWESTERN MEDICINE are presenting below the first of a series of annual indexes of the Aphorisms.

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MEETINGS

Dr. Jesse A. Rust of San Diego Elected President of Southwest Obstetrical and Gynecological Society

Dr. Jesse A. Rust of San Diego was elected president of the Southwest Obstetrical and Gynecological Society at its sixth annual meeting in Tucson, Arizona, November 12 and 13, a gathering unique for its setting in the landscaped Arizona Inn, excellent attendance, quality of speakers, and spontaneity of its sessions.

Guest speakers were Dr. Bayard Carter, Professor of Obstetrics and Gynecology at Duke University, Dr. Franklin L. Payne, Professor of Obstetrics and Gynecology at the University of Pennsylvania, Dr. Ralph A. Reis, Professor of Obstetrics and Gynecology at Northwestern University, and Dr. E. Stewart Taylor, Professor of Obstetrics and Gynecology at the University of Colorado.

Members enjoyed thoroughly the Inn with its Spanish style architecture, beautifully landscaped grounds and swimming pool. Weather was sunny and warm in the Tucson area, which boasts sunshine 336 days a year and an invigorating climate at its altitude of 2400 feet.

Dr. Jesse A. Rust

Other new officers were Dr. Charles E. Van Epps, Phoenix, president-elect; Dr. Robert P. O'Donnell, Las Vegas, Nevada, vice-president; and Drs. Zeph B. Campbell and Raymond J. Jennett, both of Phoenix, who were re-elected secretary and treasurer respectively.

Las Vegas, Nevada, was selected as the convention site for 1957 and Phoenix for 1958.

It was announced that the District VIII meeting of the American College of Obstetrics and Gynecology will be held May 27 and 28 in the Riverside Hotel in Reno, Nevada.

Elected to the Society's Council Group A were Dr. LaVern D. Sprague, Tucson, Dr. James R. Phalen, San Diego, Dr. G. Calvin Williamson, Yuma, Arizona, Dr. Jesson L. Stowe, El Paso, and Dr. Raymond L. Young, Santa Fe, New Mexico. There were no changes in Council Group B.

Dr. Rust was born in Burlington, Vermont, educated in Burlington schools and was graduated from the University of Vermont School of Medicine in 1936. He interned in Vassar Hospital in Poughkeepsie, New York, and held a teaching fellowship for three years at the University of Vermont School of Medicine. He took his residency in Boston City Hospital.

Dr. Rust served with the Army Medical Corps for four years during World War II, with two years in the South Pacific, emerging with the rank of major. He began the practice of medicine in San Diego in 1946. He is certified by the American Board of Obstetrics and Gynecology, is a member of the American College of Obstetrics and Gynecology, is a past president of the San Diego Gynecological Society and was one of the founders of the Southwest Obstetrical and Gynecological Society, serving as the Society's first secretary for three years.

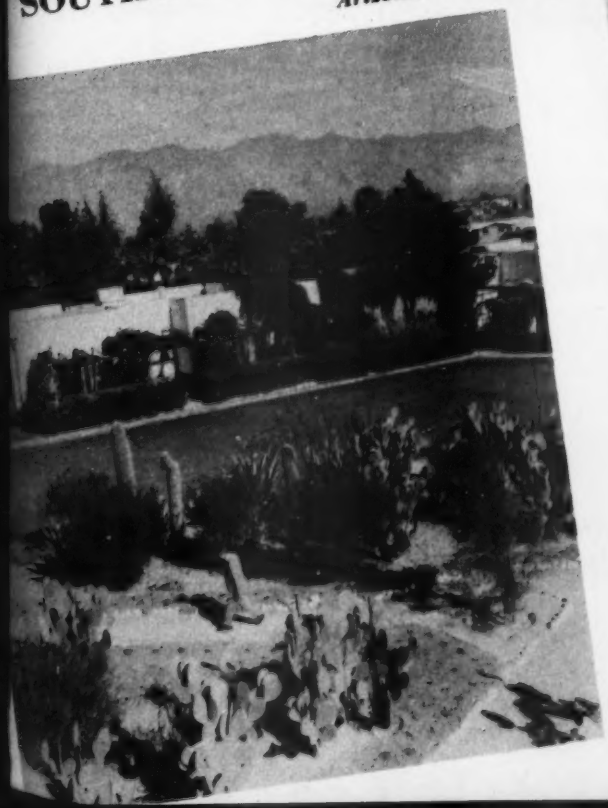
Dr. and Mrs. Rust have three sons, ages six, seven and fifteen.

Dr. Charles J. Newcomb of Tucson was master of ceremonies at a banquet held at close of the meeting, at which officers and guest speakers spoke informally. Dr. Hollis H. Brainard of Tucson was the retiring president of the Society.

Sixth Annual Meeting

SOUTHWEST OBSTETRICAL AND GYNECOLOGICAL SOCIETY

Arizona Inn, Tucson, November 12 and 13



Sixth Annual Meeting

SOUTHWEST OBSTETRICAL AND GYNECOLOGICAL SOCIETY

Arizona Inn, Tucson, November 12 and 13

Dr. and Mrs. Ralph A. Reis and four-year-old granddaughter, Joan Pomrane. Dr. Reis, Professor of Obstetrics and Gynecology at Northwestern University, was one of the speakers.

Left to right ar
Bayard Carter, Pr
sor of Obstetrics
Gynecology at Duke
versity and one o
speakers, Dr. Ge
Hart, Albuquerque
Dr. Joe Bonnet, Pha

Left to right are Dr. Hollis H. Brainard, Tucson, retiring President of the Association, Mrs. E. Stewart Taylor, Dr. James R. Phalen, San Diego, Dr. E. Stewart Taylor, Professor of Obstetrics and Gynecology at the University of Colorado and one of the speakers, and Mrs. Brainard.

Dr. Charles E. Van Epps, Phoenix, President-elect, left, and Dr. William G. Payne, Tempe, Arizona.

Dr. Robert P. O'Donnell, Las Vegas, Nevada, new Vice-president, left, and Dr. James S. Shortle, Albuquerque.

Dr. Zeph B. Campbell, Phoenix, re-elected secretary, left, and Dr. Franklin L. Payne, Professor of Obstetrics and Gynecology at the University of Pennsylvania and one of the speakers.

Left to right at the registration table above are Mrs. G. Arthur Janssen, Tucso
Mrs. H. S. Rhu, Jr., Tucson, Mrs. Judy Remes, Tucson, secretary to Dr. Brainard, Mr
Gordon Hippert, Tucson, Mrs. R. R. Lacock, Tucson, and Mrs. J. H. McEvers, Tucso
Left to right below are Dr. John Poyas, Laguna Beach, California, Dr. Celso G
Stapp, El Paso, past president, and Dr. Hollis Paegle, Corona del Mar, California

Dr. and Mrs. Rudolph Hack, San Bernardino, California.

Dr. Harris H. Barber, left, and Dr. Robert P. George, both of Albuquerque.

Left to right, Dr. Charles S. Brooks, El Centro, Calif., Dr. D. Dalton Deeds and Dr. Gilbert S. Hardie, both of San Diego.

Dr. John F. Wanless, left, and Dr. William Buster McGee, a past president, both of San Diego.

Dr. Gray E. Carpenter, left, and Dr. Harry Demarest, both of El Paso.

Dr. Howard C. James, left, Tucson, and Dr. George H. Derieux, San Diego.

Dr. Raymond J. Jennett, left, Phoenix, re-elected treasurer, and Dr. Donald G. Carlson, Phoenix.

Dr. M. Roy Miranda, left, Fontana, Calif., and Dr. Henry F. Maguire, San Diego.

Dr. J. H. McEvers, left, Tucson, and Dr. Harold Carstensen, Tucson.

Left to right, Dr. Finish Wiggins, Jr., Dr. Philip M. Savage, and Dr. Ross Ballard, all of San Bernardino.

Dr. William E. Sanders, left, Tucson, and Dr. Thomas A. Slate, San Diego.

Dr. J. R. Loughead, left, Davis-Monthan Air Force Base, and Dr. R. R. Lacock, Tucson.

Dr. Glenn H. Mathis, left, and Dr.

Dr. Robert Jones, left, Phoenix, and Dr.

Left to right are Mrs. T. O. Rowley, Mesa, Ariz., Mrs. D. E. Nelson, Safford, Ariz., Mrs. Franklin L. Payne, wife of the guest speaker, and Mrs. Calvin Williamson, Mesa, Ariz.

Left to right are Mrs. William G. Payne, Tempe, Ariz., Mrs. Walter S. Parks, Jr., Midland, Tex., Mrs. F. R. Rabe, Phoenix, Mrs. John A. Jones, Phoenix.

Left to right, Mrs. M. A. Tanny, and Mrs. A. R. Clauser, both of Albuquerque, and Mrs. Celso C. Stapp of El Paso.

Mrs. Gray E. Carpenter, left, El Paso, and Dr. A. R. Clauser, Albuquerque.

Dr. A. C. Rood, left, and Mrs. George Hart, both of Albuquerque.

Mrs. Ross Ballard, left, San Bernardino, Calif., and Miss Dorothy Landreth, also of San Bernardino.

Dr. Robert F. Thompson Elected President of El Paso County Medical Society

Dr. Robert F. Thompson was elected president of the El Paso County Medical Society December 11 at the organization's annual meeting in its Turner Home at 1301 Montana Street.

He succeeds Dr. Newton F. Walker.

Other new officers are Dr. Gerald H. Jordan, president-elect; Dr. Branch Craige, vice-president; Dr. Morton H. Leonard, secretary; Dr. Donald Ewalt, secretary-elect; and Dr. C. M. Stanfill, treasurer.

Dr. Ralph S. Clayton was elected a delegate and will work with delegates elected a year ago, Drs. Merle D. Thomas and Russell L. Deter. Dr. Jack Postlewaite was elected alternate delegate.

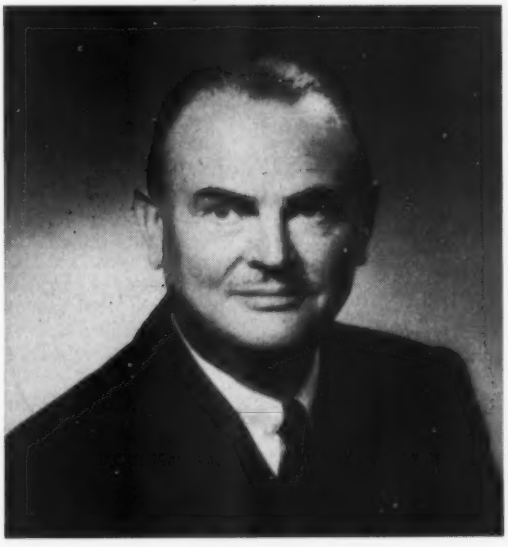
Dr. Thompson was born and reared in Nashville, Tennessee, and attended the Wallace Preparatory School. His liberal arts and pre-medical education was obtained at Vanderbilt University, where he also received his medical degree.

After graduation he remained in Nashville for internship and for post-graduate training, later being associated with Dr. Perry Bromberg, Professor of Urology at the Vanderbilt Medical School. He also served a Surgical Residency at the Newell Hospital, Chattanooga, Tennessee.

Dr. Thompson came to El Paso in 1929 and has been engaged in private practice since that time. He specializes in Urological Surgery.

He is a Fellow of the American College of Surgeons, a member of the American Urological Association and is certified by the American Board of Urology. He is a former chief of staff of Providence Memorial Hospital in El Paso and former chief of the Urological Section at Providence.

Additional professional organizations with which he is affiliated are the American Medical Association, the Southern Medical Association, the Southwestern Medical Association and the Texas State Medical Association.



Dr. Robert F. Thompson

In 1931 Dr. Thompson married the former Virginia Hood of Nocona, Texas. Mrs. Thompson is a past president of the Texas Medical Association Auxiliary. The Thompsons reside at 1227 Rim Road in El Paso. They have a son, Robert F. Thompson, Jr., who is now in the Army, and a daughter, Mrs. William Schoellkopf, Jr., of Los Angeles, California.

Dr. Thompson's hobbies are American History, golf and the collection of antique firearms. His fraternities are Beta Theta Pi and Phi Chi.

The clubs in which he holds membership are the El Paso Country Club, Kiwanis Club and the International Club. He is a member of the First Presbyterian Church.

Dr. Thompson announced plans for continuing the work of the Society's Disaster Committee and furthering all other phases of medical activity in the community in which the Society is engaged.

SURGERY

Penicillin And Streptomycin In The Treatment Of Experimental Escherichia Peritoneal Infection

Bloemers, H. W. & Kempf, J. E., Ann. Surg. 132:235, 1950

Penicillin was less effective than streptomycin in treatment of experimentally produced *E. Coli* peritonitis in mice. An additive, but not synergistic, effect was observed when the two antibiotics were given concurrently.

U. Illinois College Med.

Clinical Clippings, October, 1950.

TUBERCULOSIS

Tuberculosis Patients Two And a Half Years After Streptomycin Treatment

Maxim, M., et al., Am. Rev. Tuberc. 61:868, 1950

Two and one-half years after treatment of 35 tuberculosis patients with streptomycin the disease was found to be arrested in 19, quiescent in 5, and active in 9. Two patients died in the interin.

Montefiore Hosp.

Clinical Clippings, October, 1950.

UNIVERSITY OF MICHIGAN LIBRARIES

New Mexico Medical Society to Meet May 15-17 in Santa Fe

The New Mexico Medical Society will hold its annual meeting May 15, 16 and 17 in La Fonda Hotel in Santa Fe. It will be the 75th anniversary meeting of the society.

Dr. Stuart W. Adler of Albuquerque is president of the New Mexico Medical Society.

Other officers are Dr. Samuel R. Ziegler, Espanola, president-elect; Dr. James C. Sedgwick, Las Cruces, vice-president; and Dr. Lewis M. Overton, Albuquerque, secretary-treasurer. Dr. Earl L. Malone of Roswell is immediate past president.

Others holding official positions in the New Mexico Medical Society are:

Councilors (three years): W. E. Badger, Hobbs, 1957; W. D. Dabbs, Clovis, 1957; W. O. Connor, Jr., Albuquerque, 1958; L. L. Daviet, Las Cruces, 1958; Aaron Margulis, Santa Fe, 1959; Junius A. Evans, Las Vegas, 1959.

Delegate to American Medical Association (two years): H. L. January, Albuquerque, 1958; Alternate: Earl L. Malone, Roswell, 1958.

Board of Supervisors: A. J. Jenson, Hobbs, Chairman, 1957; W. J. Hossley, Deming, Secretary, 1957; Milton Floersheim, Jr., Raton, 1957; George W. Prothro, Clovis, 1957; A. D. Maddos, Las Cruces, 1958; G. A. Slusser, Artesia, 1958; Louis Levin, Belen, 1958; Jack Dillahunt, Albuquerque, 1958.

New Mexico Physicians Service: H. M. Mortimer, Las Vegas, 1957; H. L. January, Albuquerque, 1957; Fred Hanold, Albuquerque, 1957; L. L. Daviet, Las Cruces, 1957; O. C. Taylor, Jr., Artesia, 1957; C. S. Stone, Hobbs, 1957; R. P. Beaudette, Raton, 1958; R. V. Seligman, Albuquerque, 1958; Wendell Peacock, Farmington, 1958; Omar Legant, Albuquerque, 1958; Allen Haynes, Clovis, 1959; W. L. Minton, Lovington, 1959; J. P. Turner, Carrizozo, 1959; U. S. Marshall, Roswell, 1959; J. W. Hillsman, Carlsbad, 1959; Executive Director, Mr. L. J. LeGrave, 212 Insurance Building, Albuquerque, Phone 3-3188.

Nominating Committee: Chairman, Robert Friedenberg, Albuquerque; Junius Evans, Las Vegas; Albert S. Lathrop, Santa Fe; John F. Conway, Clovis; C. P. Bunch, Artesia; Leland Evans, Las Cruces.

Convention Committee: Chairman, Earl L. Malone, Roswell; John F. Conway, Clovis; Albert Lathrop, Santa Fe.

Public Relations Committee: Chairman, J. K. Torrens, Albuquerque; A. M. Babey, Las Cruces; Jose Maldonado, Santa Fe; John Martin, Gallup; John McCulloch, Farmington.

Legislative and Public Policy Committee: Chairman, Guy Rader, Albuquerque; W. E. Nissen, Albuquerque; Jose Rivas, Belen; Pierre Salmon, Roswell; V. K. Adams, Raton; Mike de Maio, Clovis; Leland Evans, Las Cruces; Jack Hargan, Carlsbad; R. E. Watts, Silver City; Henry Hodde, Hobbs; C. Lushbaugh, Los Alamos; Paul Feil, Deming; Vincent Accardi, Gallup; Myron Baumgartner, Alamogordo; A. T. Gordon, Tucumcari; Wendell Peacock, Farmington; J. J. Johnson, Jr., Las Vegas; Bergere Kenney, Santa Fe; John Scott, Truth or Consequences; Albert Rosen, Taos.

Advisory Committee to State Department of Public Welfare: Chairman, J. L. McCrory, Santa Fe; Eleanor Adler, Albuquerque; Aaron E. Margulis, Santa Fe; John S. Moore, Roswell; L. J. Whitaker, Deming.

Advisory Committee to State Health Department: Chairman, W. L. Minear, Albuquerque; Roy Goddard, Albuquerque; Allan Haynes, Clovis; Marcus Smith, Santa Fe; Owen C. Taylor, Artesia.

Professional Insurance Committee: Chairman, Omar Legant, Albuquerque; John Abrums, Albuquerque; Clay Gwinn, Carlsbad.

Advisory Committee to Selective Service: H. L. January, Chairman, Albuquerque; C. P. Bunch, Artesia; Raymond Young, Santa Fe.

American Medical Education Foundation: David Clark, Chairman, Albuquerque.

Rocky Mountain Medical Conference: H. L. January, Chairman, Albuquerque; Allen Service, Roswell; Victor Berchtold, Santa Fe; C. Lee Harris, Las Cruces; Charles Beeson, Albuquerque.

Governor's Committee for the Physically Handicapped: J. T. McGuckin, Chairman, Albuquerque; H. W. Gillett, Lovington; Edward Parnall, Albuquerque; Lucy G. McMurray, Albuquerque.

Infancy and Maternal Mortality Committee: Alton R. Pruitt, Chairman, Roswell; Sophie Aberle, Albuquerque; Alvina Looram, Santa Fe; Martha Howe, Rancho de Taos; R. H. Pousma, Gallup; R. V. Seligman, Albuquerque; L. F. Kuehn, Albuquerque; Jack Hargan, Carlsbad; V. K. Adams, Raton; A. S. Blauw, Roswell.

Liaison Committee to the New Mexico Hospital Association: Lewis M. Overton, Chairman, Albuquerque; Dan Cahoon, Roswell; Philip Shultz, Santa Fe.

Rural Health Committee: E. K. Bryan, Chairman, Park View; Sarah Bowen, Embudo; E. D. Fikany, Fort Sumner; Bram Vanderstok, Ruidoso; W. F. Wittwer, Los Lunas.

Mental Health Committee: W. T. Brown, Chairman, Albuquerque; E. A. Latimer, Roswell; M. H. Halvorsen, Albuquerque; Elsa Brumlop, Santa Fe.

Accident Prevention Committee: E. W. Lander, Chairman, Roswell; John Boyd, Albuquerque; J. N. Dudley, Albuquerque; Mariam Hotopp, Santa Fe; Oscar Syme, Albuquerque.

Advisory Committee — Voluntary Health Agencies: R. R. Boice, Chairman, Roswell; O. S. Cramer, Albuquerque; R. P. Crame, Portales; Homer Musgrave, Albuquerque; Garth Blakely, Springer.

Liaison Committee to the Woman's Auxiliary: C. M. Thompson, Chairman, Albuquerque.

Civil Defense Committee; Jack C. Redman, Chairman, Albuquerque; Fred G. Hirsch, Albuquerque; H. R. Landmann, Santa Fe; W. R. Lovelace, II, Albuquerque; R. R. Robertson, Albuquerque.

Advisory Committee — Rehabilitation Center: Eugene Szerlip, Chairman, Albuquerque; R. D. McClure, Albuquerque; Charles R. Beeson, Albuquerque.

Advisory Committee — University of New Mexico Medical School: Lorry C. Delambre, Chairman, Albuquerque; Lewis M. Overton, Albuquerque; Raymond L. Young, Santa Fe; Thomas L. Shipman, Los Alamos; Lawrence H. Wilkinson, Albuquerque; Richard H. Pousma, Gallup.

Southwestern N. M. Meet Scheduled for January 9

Dr. George M. Schlenker of El Paso will be the principal speaker at the regular meeting of the Southwestern New Mexico Medical Society meeting in Deming, New Mexico, January 9, 1957.

Dr. Schlenker will speak on "The Uses and Abuses of Tranquilizers." Dr. C. Lee Harris of Las Cruces, who is president of the Dona Ana County Medical Society, is in charge of the program.

The meeting will start at 6:15 p. m., with dinner at 7 p. m. in the Rio Mimbres Country Club.

A special invitation is being extended to physicians in the rapidly growing Alamogordo, N. M. area.

Officers of the Society are Dr. W. J. Hossley, Jr., Deming, president; Dr. C. C. Cobb, Silver City, N. M., vice-president; and Dr. Sidney F. Baker, Silver City, secretary-treasurer.

Dr. Basom of El Paso Named Chairman of Fracture Meeting

Dr. W. Compere Basom, El Paso orthopaedist, was elected to the American Fracture Association board of governors during the organization's 17th annual meeting in Chicago.

El Paso was chosen as the site of the 1957 convention. Dr. Basom will be chairman of the convention and program, which will be held in Hotel Cortez, Sept. 30 - Oct. 3.

Dr. Basom, who has practiced in El Paso since 1941, is an orthopaedic consultant for William Beaumont Army Hospital and a former chief of staff of Hotel Dieu Sisters Hospital.

5,000 Family Physicians to Attend March 25-28 Meeting in St. Louis

More than 5,000 of the nation's family physicians will attend the Ninth Annual American Academy of General Practice Scientific Assembly, March 25-28, 1957, in Kiel Auditorium, St. Louis.

The record-shattering attendance was predicted by Mac F. Cahal, the Academy's executive secretary and general counsel. Each of the past four meetings has successively established a new attendance record.

During the four-day scientific meeting, the doctors will hear outstanding speakers discuss important subjects including infertility, polio vaccination, and the "neglected" pediatric areas, the eyes, ears, and feet. They will visit 60 scientific and 260 technical exhibits.

Dr. I. S. Ravdin, professor of surgery at the University of Pennsylvania, will moderate a panel discussion of pre- and post-operative care. Dr. Philip Thorek, associate professor of surgery at the University of Illinois and professor of surgery at Cook County Graduate School will discuss "Intestinal Obstruction." Three other surgeons will highlight advances in vascular, thoracic, and neurosurgery.

One afternoon will be devoted to a review of procedures that assure birth of "healthy babies" from "well mothers." This subject is important to family physicians who currently deliver 85 per cent of the nation's children.

Postgraduate Conference

The Temple Division of the University of Texas Postgraduate School of Medicine offers the fifth Scott, Sherwood and Brindley Foundation postgraduate conference in medicine and surgery on March 4, 5, 6. For detailed information write: Director, Scott, Sherwood and Brindley Foundation, Scott and White Clinic, Temple, Texas.

MICHIGAN HISTORICAL COLLECTIONS UNIVERSITY OF MICHIGAN LIBRARIES

THE PRESIDENT'S COLUMN

Southwestern Medical Association Meeting in October Now Being Lined Up

By Celso C. Stapp, M. D., El Paso

Plans for the 1957 meeting of the Southwestern Medical Association are well under way. The meeting will be held at the Hotel Paso Del Norte in El Paso on October 9, 10, and 11, 1957. The program will be quite varied and there will be at least seven speakers. Several of the speakers have already accepted invitations. There are only two who have not been heard from.

When all are on the line the full list will be published. As during the last time the meeting was held in El Paso we are hoping to have the first day of the meeting devoted to sectional meetings. A new feature contemplated is to have medical films shown all day the first day. Round table luncheons will also be held daily with a chance for everyone present to ask questions.

A full social and athletic program is also being planned with a variety of entertainment for the ladies. For those wishing to stay over for Saturday October 12, 1957 there will be a Texas Western College football game and on Sunday October 13 there will be a bull fight in Juarez.

Committees Named

The Convention Committee will have as General Chairman Dr. Merle D. Thomas. Other members of the Committee will be Dr. Newton F. Walker representing the El Paso County Medical Society, Dr. Maynard Hart program chairman, Dr. Gordon Black finance, Dr. Willard W. Schuessler social program, Dr. E. S. Crossett exhibits, Dr. H. D. Garrett hotel arrangements, Dr. W. R. Gaddis properties and General Practice representative, Dr. Jack Bernard tournaments, Dr. Louis Breck transportation, and Dr. Russell L. Deter secretary. Mrs. H. D. Garrett, president of the El Paso County Medical Auxiliary and Mrs. W. W. Schuessler will be in charge of the ladies entertainment.

We of El Paso, your hosts, do hope that you will mark your calendar now and make a New Years Resolution, not to be broken, that you will be in El Paso for the Meeting of the Southwestern Medical Association on October 9, 10, and 11, 1957. This will give you time to have recovered from Christmas and the New Year.

Coming Meetings

Southwestern New Mexico Medical Society, Deming, N. M., Jan. 9.

District One, Texas Medical Association, Pecos, Texas, Feb. 12.

Temple Div., Univ. of Texas, Temple, Texas, March 4, 5, 6.

American Academy of General Practice Scientific Assembly, March 25-28, 1957, in Kiel Auditorium, St. Louis.

New Mexico Medical Society, May 15, 16, 17, 1957, in La Fonda Hotel, Santa Fe.

District 8, American College of Obstetrics and Gynecology, Reno, Nevada, May 27 & 28.

American Fracture Association, September 30, October 1 and 2, 1957, in El Paso. Dr. W. Compere Basom is in charge of arrangements.

Southwestern Medical Association, October 9, 10, 11, 1957, in El Paso.

Brief on Ulcers

Ant, M.: New Medical Treatment for Peptic Ulcers, including a review of medical literature, New York Physician & American Medicine, vol. 47, (Nov.) 1956.

An analysis of 195 case histories of gastric or duodenal ulcer treated with Rabro tablets for three to twelve weeks showed clinical benefit in 179 cases (92 per cent) and X-ray improvement in 160 of 186 roentgenologically studied cases (86 per cent). The results in ambulatory cases were almost as satisfactory as for bed patients. The advantages of this treatment were prompt relief of the symptoms in less than a week, relief of spasm as well as of gastric hyperacidity, and roentgenological healing of the ulcer niches in most cases. Rabro tablets contain glycyrrhiza extract of standardized glycyrrhizin content compounded with light magnesium carbonate, bismuth subnitrate and sodium bicarbonate as antacids, plus small amounts of frangula and calamus to offset the constipating effects of bismuth. Apparently glycyrrhiza relieves gastroduodenal spasm and thereby contributes to the natural healing of gastric and duodenal ulcers. The foreign literature on use of Rabro tablets in peptic ulcer is reviewed.

Medical and Hospital Disaster Plan Adopted By El Paso Medical Society

A complete plan for medical and hospital action in event of a disaster was announced in early December by Dr. Newton F. Walker, immediate past president of the El Paso County Medical Society.

The plan has been approved by the Medical Society, local hospitals and has been worked out in conjunction with Mayor Tom Rogers of El Paso and County Judge Hugh McGovern of El Paso, who have sanctioned the plan.

Heading the medical society's disaster committee are Dr. Bloyce H. Britton, chief, and Dr. Branch Craige, deputy chief.

The plan is flexible to provide for a major disaster involving over 100 persons or a minor disaster involving between 50 and 100 persons. It is the result of several months of work by local doctors.

It will be a blueprint for emergency operations involving a disaster in the El Paso area and will be made available to Juarez, Mexico, just across the Rio Grande, if assistance is requested.

Procedure Explained

The emergency procedure is as follows:

Police and sheriff's deputies go to the scene of the accident. Dr. W. W. Schuessler is in charge of liaison for the sheriff and police departments.

The police notifies the chief of the Disaster Committee, who goes to the scene of disaster.

The chief of the Disaster Committee evaluates the situation from the medical viewpoint.

Telephone Contacts

The Physicians Exchange will contact by telephone the following:

1. Members of the disaster scene team informing them to go immediately to the scene of the accident. The team is composed of Drs. M. C. Davidson, H. J. Bell, and B. L. Goodloe.

2. Doctors, who will be notified to report to their previously assigned hospitals.

3. El Paso General Hospital, Hotel Dieu, Providence Memorial Hospital and Southwestern General Hospital. These hospitals will then check on authenticity of the accident report; call auxiliary personnel such as nurses, pharmaceutical personnel, and central supply personnel; set into effect their own disaster plan; if necessary discharge well patients to make room for incoming patients; and set up waiting room for victim's relatives, thereby decreasing confusion in hallways.

Blood Bank Used

Services of the Southwest Blood Bank of El Paso will be utilized.

Dr. Craige is also in charge of coordination with the hospitals.

The Red Cross will be notified and will furnish first aid at the scene of the accident and participate in transporting victims to the hospital.

Dr. R. J. Cardwell is responsible for coordination with the Red Cross. He is also in charge of transportation, including the use of ambulances, taxicabs, the El Paso City Lines buses, and local flying services.

Radio and television stations will also be notified. The stations will in turn make 30-minute announcements for doctors and auxiliary hospital personnel to go to their assigned hospitals. Dr. J. B. Miller is responsible for this phase of the program. Radio units of local taxicab companies will also be utilized.

Simultaneous Steps

The various steps of the emergency procedure will be taken, in most cases, simultaneously. The plan is designed so that it may be adapted to the particular requirements of the disaster.

The assignment of doctors to various hospitals is based on specialties and types of practice. For example, general practitioners will be divided roughly among the four hospitals. The same principle applies in the assignment of specialists, so that various classifications of doctors will be available at each hospital.

The entire active membership of the El Paso County Medical Society will be mobilized for the disaster. A total of 202 doctors will be available for the disaster operation.

Demerol Poisoning

Ingestion Of 1250 Mg. Of Demerol (Isonipecaine) With Suicidal Intent

Cohen, A. E., Ann. Allergy 8:547, 1950

The patient described ingested 1250 mg. Demerol in a single dose, an amount exceeding the largest individual dose recorded in available literature. Gastric lavage and supportive therapy resulted in the patient's complete recovery without sequelae. Cohen states that the efficacy and relative low toxicity of Demerol suggests its use among patients "in whom suicidal tendencies may be suspected."

Clinical Clippings, October, 1950.

ORIGINAL ARTICLES

The Post Polio Calcaneo-Valgus Foot*

By Louis W. Breck, M. D., El Paso

Introduction

The subject of this paper was suggested by Dr. Eggers, professor of orthopaedic surgery at the Medical Branch at the University of Texas at Galveston with a statement by him that he thought this would be a particularly good subject for discussion because of the fact that very little has been written on it.

In reviewing The Journal of Bone and Joint Surgery from 1932 to the present date not a single article was found on this exact subject. A number of very good articles on deformities of the feet due to poliomyelitis have appeared in this journal from time to time but none has dalt specifically with calcaneo-valgus deformities only.

By definition a calcaneus deformity is one in which the os calcis projects downward towards the sole of the foot and anteriorly towards its fore-end, so that the heel touches the ground first when the foot is placed on the ground. The degree of calcaneus is variable in different patients but usually if this deformity occurs it has a tendency to gradually progress and become a very severe one.

Foot Bent Outward

By definition a valgus deformity of the foot is one in which the foot is bent outward. This deviation may be quite variable. Accompanying the valgus deformity there is a more or less marked pronation of the entire foot. An abduction deformity of the entire foot may occur, and in fact usually does.

It is felt that the term valgus very much better describes the deformity than either forefoot abduction or pronation as these imply a voluntary placing in the abnormal position rather than a true valgus deformity.

There has been in the past some confusion about the terms valgus, pronation, eversion and abduction.

Difference of Opinion

There is still some difference of opinion among various authorities as to exactly how comprehensive each of these terms is. An outward bending of the foot is essentially what valgus is and the foregoing remarks represent pretty much the consensus of opinion among orthopaedic surgeons as to the terms involving the various components of this combined deformity.

A combination of calcaneus and valgus deformities in the same foot occur together relatively frequently. The severity of the deforming force in each case will be an important factor involved in the difficulty in treatment. The deformity is usually persistent and progressive. It almost invariably requires surgical treatment. There is a marked tendency to recurrence.

Non-Surgical Treatment

In general the non-surgical treatment of this deformity is unsatisfactory. The long range conservative treatment is usually reserved for patients with mild deformity and with little or no tendency to progression. Such cases are not encountered often.

One important point in connection with the treatment of these cases is that when the deformity is first noted great attention should be paid to it and it should be watched very carefully for progression.

The degree of progression should be noted and surgical treatment rendered relatively early but not before one and one-half years have elapsed to allow full return of the paralyzed muscles. As to when surgical treatment should be rendered will be discussed in some detail later in this paper.

Conservative treatment usually consists to start with of a longitudinal arch support, an inner wedge on the sole and heel of the shoe and sometimes a general elevation of the heel.

A Thomas heel and special shoes are employed by some orthopaedic surgeons. A double bar ankle brace with a reverse (dorsi-flexion) stop at a right angle and with an inside "T" strap is effective in partially controlling the deformity.

General Considerations

Although in this paper the two elements of the deformity; the calcaneus and the valgus, will be considered separately as far as surgical treatment is concerned, it is really not proper to separate them in the orthopaedic surgeon's mind. Instead they should really be considered together and treated as two integral parts of the same deformed foot.

In connection with the general consideration of this problem care should be given to the conservative management as outlined in the preceding remarks. Although it is quite true that conservative treatment is not satisfactory on a long range basis, it is usually helpful in preventing rapid progression of the deformity and in preventing an extreme degree of deformity before surgical treatment is undertaken.

*Read at the meeting of the Texas Orthopaedic Association in Galveston.

Age of Treatment

The age of treatment at which surgical intervention can be undertaken is quite different in the two components of this deformity. The calcaneus deformity is usually not amendable to satisfactory surgical treatment by arthrodesis before the age of eight. This represents the consensus of American orthopaedic surgeons thinking.

An arbitrary age of eight has been pretty well established in times past as the earliest time at which extensive bone work should be undertaken. One reason for this is that a good deal of growth disturbance of the bone may and in fact often occurs if the child is operated on earlier than the age of eight.

Some orthopaedic surgeons prefer to wait till the age of 10 or even 12. If the surgical program on the bones is undertaken earlier care should be taken not to get into the bone itself very far and instead confine the surgery to the joint surfaces.

Earlier Procedure

The procedure described by the group under Dr. Green's direction in Boston and popularized recently by Dr. Grice may be done much earlier, at least as early as the age of four. This procedure will be described later in this paper and consists primarily of placing a bone graft in the sinus tarsae on the lateral aspect of the foot.

In regard to tendon transplantation which is directed at both components of the deformity, this may be done much earlier than the age of eight and in fact, may be undertaken at almost any age. It should be done as early as the deforming force can be carefully analyzed and intelligent treatment outlined but not before 18 months after the acute attack of poliomyelitis.

In connection with the general remarks on the calcaneo valgus foot, attention should be called to the easy confusion which may occur between this deformity and a flail foot. A flail foot presents a considerably different problem and its treatment is different from that of the calcaneo-valgus deformity.

It is obvious that tendon transplantation in a flail foot will in general prove to be of no avail since no functioning muscles are present whose tendons may be transferred to correct function or prevent or correct deformity. It is relatively easy to confuse a flail foot with an equino-varus foot and careful attention should be given to this point.

The Calcaneus Deformity

The etiology of the calcaneus deformity is a severe or complete paralysis of the gastrocnemius muscle or the entire triceps surae muscle group. The etiology is clear cut. A lack of pull on the posterior aspect of the os calcis through the Achilles tendon causes a downward and forward rotatory displacement or deformity of the os calcis.

In order to correct the deforming force the proper approach to the problem is to transfer the tendons of non-paralyzed muscles into the area of the attachment of the triceps surae group; that is into the most posterior portion of the calcaneus bone. Muscle transfer is quite effective in controlling this deformity if there are strong muscles to transfer and especially if there is a little power left in the triceps surae.

The muscles which may be transferred to supplant or assist the triceps surae group are those on the lateral side of the foot and ankle, the inner side of the foot and ankle, the posterior aspect of the foot and ankle, and the anterior aspect of the foot and ankle.

Lateral Side

On the lateral side of the foot and ankle the peroneus longus and the peroneus brevis are present. If they are strong they are the primary force in producing the valgus deformity which will be discussed later. Thus, by transferring the peroneus longus and brevis posteriorly into the back of the os calcis both the calcaneus and valgus deformities are attacked at the same time.

On the inner side of the foot and ankle the tibialis posterior tendon and the flexor digitorum communis longus tendons are available for transfer. One or preferably both of them may be transferred.

On the posterior aspect of the ankle the flexor hallucis longus tendon is available for transplantation into the os calcis.

On the anterior aspect of the calf the tibialis anterior tendon is sometimes available for transfer. The transplantation of this tendon is accomplished by passing it through a large window in the intermuscular septum between the tibia and fibula and then running it back to the posterior aspect of the os calcis. This operation is sometimes performed and often is successful.

Smaller Percentage

It is attended with a much smaller percentage of success than the transplantation of the other tendons for two reasons. The tibialis anterior is a direct antagonist of the triceps surae group and therefore, is not as good a tendon to transfer as one which is somewhat less antagonistic in its function. The other reason it less often works is that it becomes stuck in the tunnel between the tibia and fibula and does not function.

There is one other operative procedure on a tendon which is sometimes done. This is a translocation operation in which the tendon of the peroneus longus is transferred to a groove under and posterior to the os calcis. This groove in the os calcis is made at the time of operation and the tendon placed in it. This procedure has never proved very popular.

Transplanting Tendons

In connection with transplanting the tendons of active muscles which are to be used as substitutes for

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the triceps surae it is generally recommended that these tendons be placed through a hole in the os calcis just distal to the attachment of the Achilles tendon, after first passing the tendon or tendons through the Achilles tendon.

It is generally conceded that this is superior to suturing the tendons into the Achilles tendon near its attachment. Many orthopaedic surgeons do however, simply suture the tendons into the heel cord rather than passing them through the os calcis.

Following the transplantation the extremity should be splinted or immobilized in plaster for about three weeks to allow the transplant to become firmly attached to the bone or tendon. Motion can be begun relatively early in these cases since children's repairative processes take place very rapidly.

Muscle Re-Education

The importance of muscle re-education following the transplant cannot be overemphasized. It is of considerable importance to have an adequate physical therapist work with these children until they understand just how to use their newly transplanted muscles.

It is not the intention of this author to paint too glowing a picture as to the percentage of success which may be anticipated with tendon transplants for calcaneus deformity. There are many variables which enter into the end result statistics which may be anticipated.

However, a really good function from a transplanted muscle often does not occur and often the orthopaedic surgeon is disappointed as to the amount of actual effective power in the disabled extremity following the muscle transplant.

In connection with the treatment of the calcaneus deformity arthrodesing operations are quite important, especially the triple arthrodesis. These will be discussed in detail in the succeeding section in connection with the valgus deformity.

The triple arthrodesis is mentioned here in the discussion of the calcaneus deformity to emphasize that this operative procedure treats not only the valgus deformity but the calcaneus deformity as well.

The Valgus Deformity

As mentioned above transferring the peroneal tendons is very effective in removing the deforming force which causes the foot to go out into valgus. The transplantation of these tendons should be undertaken at an early age.

An important consideration in the treatment of the valgus deformity is some type of arthrodesing operation. The triple arthrodesis should be mentioned first because it is by far the most important operative procedure in the treatment of poliomyelitis deformities of the foot.

This operation was described by Ryerson in 1923. The operation was actually evolved from the Hoke combined subastragular arthrodesis which was described by this great crippled children's orthopaedist in 1921. Dunn of England described an arthrodesis similar to this in 1923 but without the arthrodesis of the calcaneo cuboid joint.

It was Dr. Ryerson of Chicago who first recognized the importance of fusing all three joints: the subastragaloid joint, the astragalo-scaphoid joint, and the calcaneo cuboid joint. The triple arthrodesis is the best operation for stabilizing the foot.

Triple Arthrodesis

The triple arthrodesis can be very conveniently combined with a wedge osteotomy to correct the forefoot valgus deformity present. A considerably greater amount of bone may be removed from the medial aspect of the foot than the lateral aspect and in this way the forefoot can be placed in mid-position at the time the triple arthrodesis is done.

Another thing which may be done is to re-shape the undersurface of the talus and the superior posterior surface of the calcaneus to place the calcaneus squarely under the ankle and also to decrease a calcaneus deformity which may have developed. The triple arthrodesis is a very versatile operation for remodeling a deformed foot.

As previously mentioned it is generally considered hazardous to do a triple arthrodesis earlier than the age of eight. At the time the triple arthrodesis is done regardless of age it is of great importance to avoid getting down into the bone too far if the bone is still in a very actively growing stage.

It may be readily seen that extensive bone work at the time the arthrodesis is done will produce damage to growing bone and certainly will produce at least some further difference in size between the two extremities.

Stabilizing Major Joints

Before leaving the subject of the triple arthrodesis the author of this paper would like to mention the matter of stabilizing the two major joints following the completion of a triple arthrodesis. In 1943, Dr. Guy Caldwell first described this technique. However, he transfixed all three joints with small pins or heavy Kirschner wires. The talo-calcaneo, the calcaneo-navicular, and the calcaneo-cuboid joints were all pinned in proper position under direct vision.

Ever since learning of this operative technique I have consistently used it. I have however, discontinued pinning the calcaneo-cuboid joint as it has very little tendency to slip out of position if the other two major joints are transfixed in excellent position. Since describing his original technique Dr. Caldwell has discarded it in favor of usage either staples or vitallium wood-fasteners to hold the joints.

Small Pins

In employing the small pins what is done is simply to carefully transfix the astragalo-scaphoid joint in the exact position desired, this transfixtion being done under direct vision. The pin is inserted

from before, backward. Following this, the subastragaloid joint is transfixed very carefully from below upward in a similar way.

After these joints have been transfixed the heavy wires or small pins are left protruding through the skin. They are bent at a right angle and cut off except for a small piece. The reason for bending them is to prevent their inward migration. Following this part of the operation the closure is done in the usual way and a cast applied.

Precision Fixation

I feel that it is quite desirable to do a precision fixation of the two major joints involved in a triple arthrodesis rather than doing the so-called moulding of the joints as is commonly done without precision fixation. I leave these pins in usually for six weeks until a good beginning union of the joints has occurred.

The pins may be removed earlier if desired or if there is evidence of undue irritation around them. Usually they do not become irritated and may be left in right through the change of cast which is usually done at three weeks.

Dr. Caldwell and his associates mention that the pins are undesirable because of the pain which the child has at the time they are removed. I feel that the amount of pain they have is insignificant and only momentary in any case.

An anesthetic is not required for removal of the pins even if they are stuck tightly. I believe that the advantage of pin fixation are great and the disadvantages small.

Care Required

Care must be exercised not to place these pins across the ankle joint or through an important tendon. One of my associates has wondered if perhaps this pin fixation may not be instrumental in producing a non-union of the joint or joints which one is attempting to fuse. I believe the reverse is true, and that the pins tend to hold the joints more securely. They constitute a sliding internal fixation type of arrangement which allows the joints to slip together rather than holding them apart.

Non-union is fairly common following a triple arthrodesis operation and it is my definite impression that pin fixation of these joints tends to decrease the percentage of non-union rather than increase it. I am pleased with the pin fixation and do not intend at this time to discontinue it in favor of some other type of internal fixation.

Operation Described

Dr. Grice of Boston in 1952 described an operation suggested by Dr. William Green for doing a bone graft on the lateral aspect of the foot in the region of the sinus tarsae. Since then, additional articles have been published by this Boston group regarding this.

The operation is relatively easy to do and the joint surfaces themselves are not disturbed at the time of the operation since it is essentially an extra-articular procedure. One or more struts of bone are placed vertically between the astragalus and the calcaneus on the lateral side of the foot in the region of the sinus tarsae.

These grafts are wedged into position so that they do not slip out. This operation has considerable merit both as to its effectiveness in controlling the progression of the valgus deformity and likewise has a big advantage in that it may be done early.

Just how much it is effective in preventing the calcaneus element of the deformity is not apparent as yet to this author. The operation as far as can be determined is relatively innocuous even when done at an early age.

Astragalectomy

No discussion of the treatment of the calcaneus deformity of the foot would be complete without describing and discussing the operation of astragalectomy. This was described originally by Whitman and for many years was a standby in the armamentarium of the orthopaedic surgeon. In more recent years it has become increasingly less popular.

The reason for this is that it is an extensive operative procedure and is really a reconstruction type of surgical approach rather than a precision type of operation such as the tendon transplants and triple arthrodesis are and in addition to this, considerable shortening of the extremity is produced. In an occasional well selected case however, astragalectomy probably still has some usefulness.

Astragalectomy accomplishes a number of things at once. By removal of the astragalus a great deal of slack or room is gained in the posterior portion of the foot. This allows the calcaneus to move posteriorly and upward into a more normal position. The back part of the longitudinal arch is thus flattened and restored to a relatively normal position.

Mechanical Advantage

Weak muscles which have been transplanted into the posterior aspect of the calcaneus are given a very great mechanical advantage because the os calcis now points posteriorly and presents a long lever arm upon which the muscles can act. Generally speaking no marked improvement is obtained in the forepart of the foot.

Astragalectomy has the disadvantage that it usually ends up with the patient having a painful foot. The lower end of the tibia fits rather crudely into the defect where the astragalus was formerly located.

A fairly satisfactory joint arrangement does develop however, and this occurs especially in younger children. Usually later in life a considerable amount of traumatic arthritis develops in the new ankle joint and almost always there is a varying degree of pain present when the ankle is used for a substantial amount of walking and standing.

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General Considerations

There has been throughout the years a good deal of discussion as to whether a triple arthrodesis and a tendon transplant should be combined at one operative procedure. The consensus of opinion is that it is better to do them at separate times but in actual practice it is surprising how often orthopaedic surgeons combine the two procedures at one sitting. The tendon transplant should be done at as early an age as practicable whereas the triple arthrodesis should be put off until the age of eight.

If there is no urgent need to do the tendon transplant sooner it is a great temptation for the orthopaedic surgeon to do the two operations at the same time. There is little doubt but that at least somewhat better results will be obtained if the operative procedures are not done at the same sitting. The reasons for this are obvious.

Deleterious Effect

The prolonged period of immobilization in plaster required following a triple arthrodesis (eight to twelve weeks) has a deleterious effect on the transplanted tendons as motion and exercise of these should be started much earlier. Also when an extensive bone operation has been done on the foot inflammation occurs in the soft tissues all around the area. This is in addition to the inflammation produced by the tendon transplant operation. Thus, a significant amount of additional fibrosis and adherence may occur.

Some orthopaedic surgeons may aver that the disadvantages of doing the two procedures at once do not out-weigh the advantage of having the patient submit to only one general anesthetic and major operative procedure. This type of reasoning has some merit but in the minds of most orthopaedic surgeons the reverse is felt to be true. In other words two operative procedures are not as deleterious as the combined operative procedure.

Important Point

In describing the calcaneo-valgus deformity I have not as yet brought out an important point. The development of a progressive cavus deformity may occur. This may require additional treatment and a plantar fasciotomy should be done in combination with a triple arthrodesis in some cases.

The subject of recurrence of the calcaneo-valgus deformity should be mentioned. Sometimes in spite of everything that can be done the deformity recurs or tends to recur. Frequently additional operative work in the form of a wedge osteotomy may be required. When this is inevitable the surgeon should unhesitatingly go ahead and do another operative procedure on the patient where it is clearly indicated.

If a triple arthrodesis fails to fuse it is almost always necessary to go back and make another attempt to obtain fusion. Statistically the second attempt to obtain fusion is attended with nearly as good statistical results as the first attempt and therefore, every effort should be made to continue with the case until a good triple arthrodesis with solid union is secured.

Discussion of Cases

The author would like to state frankly that he has had only a limited experience with calcaneo-valgus deformities following poliomyelitis. He has done through the years a handful of these cases and has had the opportunity to follow some of them for a long time.

In the half-dozen or so cases which the author has done he has not been able to follow them in a statistically significant number of instances. Follow-up studies on these patients seem to be difficult to obtain in our hands. The reason for this is that they have to be followed for a long time and when an attempt is made to get them in for a final check-up they have been lost because they do not answer correspondence largely because their correct addresses cannot be located.

However, I have the impression that the majority of the cases have turned out reasonably well considering the relatively severe nature of the deformity. One of them has had to be done over because of recurrence of the deformity. Two others have had transferred tendons pull loose which have had to be replaced.

Good Results

Transplantation of the two peroneal tendons and the tibialis posterior into the os calcis has given good results in a relatively high percentage of cases and a triple arthrodesis has been a very satisfactory operation.

It must be admitted that my own conclusions are based on my impression of results rather than on any statistical analysis of cases treated.

Conclusions

In attacking the problem of the post polio calcaneo-valgus foot deformity its early recognition is most important. With paralysis of the triceps surae group of muscles an early tendon transplant to replace their function is indicated if suitable muscles are available for this purpose.

The triple arthrodesis is the most important operation in controlling and correcting the calcaneus deformity. Care should be taken not to do this operation too early and exercise judgment in the selection of cases for it.

The over-all picture of the correction of this deformity is good although recurrences are common and frequently an additional surgical attack on the problem is required later on in the case.

Summary

An analysis of the problem of the calcaneo-valgus deformity of the foot following poliomyelitis is gone into in some detail.

(Continued on Page 58)

Fractures of the Spine and Pelvis*

By Lewis A. van Osdel, Major, M. C., William Beaumont Army Hospital

Through the ages man has been aware of fractures involving the spine but for the most part the only recognized ones were those with severe deformity or with neurological complications. For the most part these were due to direct blows in combat or falls from a height. The incidence of such fractures in the days of four masted sailing vessels was comparatively high.

Not until 1895 did Kummel describe the kyphosis resulting from a missed fracture of the spine—presumably a compression type. Since the x-ray has been developed various types of spinal fractures have been noted. Although these various types take specialized treatment; as a whole, one is concerned mainly with fracture-dislocations and compression fractures.

Ominous Connotation

Fractures of the spine as a whole have a very ominous connotation to the layman and physician alike. In fact, to many of us the picture of immediate or impending death and the threat of paralysis is omnipresent. If one realizes, however, that only 5-6 per cent of all fractures involve this area and further that only 10 per cent of all spinal fractures have significant neurological findings the picture is less foreboding. Unconsciously all of us remember our first paraplegic or quadriplegic and the complications attendant thereto when fractures of the back are mentioned.

I personally feel that it is more important to recognize uncomplicated spinal fractures and treat them energetically enough to rehabilitate them without significant morbidity, than it is to make the immediate diagnosis of the exact level of a patient with obvious cord damage.

Usually a routine examination for gross deformities, muscle spasm, localized pain over the spinous process, reflex changes, sensory changes, or frank weakness or paralysis will usually group our patients readily for us. The more refined clinical examination of the patient with some obvious neurological involvement will be discussed later.

Causes Listed

In this day and age, indirect violence and muscle action account for most of the spinal fractures whether due to falls from a height, blows from heavy object on the shoulders or back, automobile accidents, or acute flexion injuries such as we see in diving accidents.

The basic pathology in almost all spinal fractures except those of the transverse and spinous processes is due to an acute hyperflexion injury, either forward or lateral, in which the body is crushed along with damage to the posterior elements, intervertebral discs, interspinous ligaments, and often with associated spinous process injury.

After compression of the body has taken place, variable disruption of the posterior elements ensues. If carried far enough, the force will then displace the body above with resultant elongation or narrowing of the lumen in which the cord lies either by direct bony encroachment or from hemorrhage and edema. The anterior longitudinal ligament usually remains intact and acts as a check rein.

Compression fractures constitute over 50 per cent of these fractures and as such include the greatest portion of the important fractures less the frank dislocations. Of this group some 70 per cent are located in the dorsolumbar region at the junction of the fixed thoracic spine and the mobile lumbar spine. The lower lumbar spine is then next involved followed by the cervical spine and last of all the dorsal spine above Dll.

An accurate history of flexion injury, suspicion of fracture, along with girdle like pain and the findings of, localized pain over spinous process, muscle spasm, and a frank kyphosis will establish the clinical diagnosis. Generally speaking if the patient has no gross sensory changes and can move all four extremities without obvious weakness, one can direct his attention to the fracture and place the problem of neurological involvement in the background.

Patient Supine

Through the ages these fractures when noted were treated by keeping the patient supine in bed. After the advent of plaster in 1853 application of body casts, in whatever position the fracture fragments happened to be, was accomplished. In 1923 Wallace described a gradual hyperextension frame for treatment of fractures of the spine. Most of his cases were old fractures.

Fresh fractures continued to be treated by simple immobilization alone until 1929 when A. G. Davis published his manipulative method of correction of spinal deformities followed by applying hyperextension type body casts. Prior to Davis' paper the rule was hyperextension frame for six months, body cast for six additional months and then brace for one year or more.

Davis' manipulation consisted of overhead traction on feet in position of hyperextension and application of body cast. In 1931 Watson-Jones came out with his postural reduction by suspension. Various authors came out with various frames such as Bradford, Herzmark, Ryerson, etc., all of which utilized the hyperextension idea and reduction of the compression deformity if at all possible.

Unfortunately the cast was worn for 5-8 months following reduction and then a brace for 12-18 additional months without regard for rehabilitation of

*From Symposium on Surgery in Acute Trauma delivered at William Beaumont Army Hospital, April 1956

back musculature. In the 1930's the Germans after Boehler began intensive rehabilitation in body casts which had large abdominal holes cut in them.

During World War II manipulative reduction plus cast plus strenuous resistive exercises became routine so that upon removal of the cast no brace was necessary. At last it was recognized that the best spinal brace is good strong musculature. Statistics show that 90 per cent of AAF spinal injuries of World War II returned to duty with this regime.

Bolder Treatments

Throughout the 1930's J. A. Key and others would treat the compression fracture in the aged by bed rest without manipulation followed by bracing and ambulation after 8-10 weeks. In England various men associated with the coal mining industry were gradually becoming bolder and treated by so-called functional methods. The foremost of these was E. A. Nicholl, Mansfield, England, who wrote in the British Bone and Joint Journal of 1949 on fractures of the dorso-lumbar spine.

In Nicholl's series one finds interesting food for thought. It included all spinal fractures over a six year period ending 1949 with 2 to 5 year follow up on all patients. In his series he noted the following main groups:

Anterior wedge fractures..58 per cent
Lateral wedge fractures...15 per cent—A new type
Fracture-dislocations.....19 per cent
Isolated neural arch fx...09 per cent

Frank Departure

In discussing Nicholl's work one is impressed by his frank departure from all teaching to date on the continent by such outstanding orthopedists as Boehler and Watson-Jones in England, and Key and Conwell and others in America. These men had all insisted that good functional results were directly proportional to the ability of the surgeon to reduce the fracture.

The level of injury in this series hit the usual peak in the lower dorsal and upper two lumbar levels. Interestingly enough no example of extension type injury was included but all injuries here were sustained while working at the coal face.

In his anterior wedge group he noted that if minimal deformity only was present that usually the interspinous ligament had remained intact and the fracture was completely stable. If there was severe comminution he felt these fractures were really a fracture-dislocation type and were unstable. He felt that the fulcrum in a compression fracture was at the nucleus pulposus as Calve had inferred in 1930 and further that the crux of such injuries was the intact vs the ruptured spinous process. He noted the so called concertina type of fracture was fairly common in older workers.

Fractures Regrouped

After classification of his fractures as above, Nicholl regrouped them for purposes of treatment into two groups:

(1) Stable fractures: Mild and moderate anterior compressions, lateral wedge fractures and all laminal fractures above L4.

(2) The unstable fractures are: Severe compression type, all fracture-dislocations, and all laminal fractures L4.

The functional treatment of stable fractures outlined by Nicholl consisted of: Completely ignoring the reduction or immobilization of fracture. Bed rest for four weeks with intensive extension exercises and daily heat and massage to back. At four weeks patients were ambulated and transferred to rehabilitation center where they were given intensive exercises to rehabilitate back muscles. At eight weeks they were graduated to strains and stresses reduplicating stresses which would be found upon return to the coal face and hence was actually a hardening phase. At twelve weeks almost all had been returned to work.

Cast in Neutral Position

The functional treatment for unstable fractures was application of a protective plaster cast in neutral or so called physiological position. The vertebral bodies were thus permitted to approximate in plaster and where there had been disc and ligament injury, collapse of the space and spontaneous anterior fusion ensued. Of ten fracture-dislocations in this series some seven fused spontaneously and returned to mine work with best results in the entire group. No patient with a surgically fused spine was ever returned to mine work.

Treatment of isolated fractures of the neural arch was carried out depending on level. If above L4 they were considered stable and were treated by functional method. At and below this level fusion was done immediately with accurate anatomical reduction in these deemed important.

Treatment of lateral wedge fractures was varied depending on extent. Basically these are stable and should be treated by functional method. Where there is neurological involvement, however, one is justified in treating them as a fracture-dislocation by immediate fusion. This group gives the worst prognosis.

Considerable Time

I have spent considerable time going over Nicholl's works simply because I belong to the school of functional treatment of fractures of the spine bases on his classification of unstable versus stable fractures. At Brooke Army Hospital and here at William Beaumont Army Hospital over the past five years all fractures have been so treated with very impressive results compared to World War II standards.

Only a spattering of cases have resulted in separation via boards, where the patient did not have 20 years of service, with most returning to temporary limited duty and eventually full duty with little difficulty. We in the military feel that this treatment is good. Many of our civilian confreres agree, but be-

cause of the possibility of legal action tend to treat by the old method.

That reduction has any direct relationship to final result is very doubtful. Some unbiased workers such as Baab and Howorth in 1951 found no significant relationship between functional results and anatomical reduction. In fact, some 94 per cent of their series had redisplaced sometime after initial reduction. Almost all agree that four months of plaster is necessary to prevent redisplacement of a high number of cases.

Transverse Processes

Fractures of the transverse processes are due to a rotational injury with the iliopsoas musculature pulling the process off. Here no attempt is made at reduction. The whole solution is treating the soft tissue injury which may be severe. Retroperitoneal hemorrhage is common here with its attendant complication of paralytic ileus.

Here at William Beaumont many of these patients require nasogastric suction with supplemental intravenous fluids and rare sips of water orally until good bowel sounds are present or patient is passing flatus. These patients are sore. A short period of rest followed by active extension and finally flexion exercises will get most of these back to duty in 3-8 weeks at most.

Fractures of the spinous processes without other injuries are not common. Clay shoveler's syndrome consists of fracture of the spinous process of C7 or T1 when shoveling with long handled shovel in clay which tends to put a tremendous stress on the lower nuchal ligament which may snap off the processes of the spines adjacent to the relatively immobile dorsal spine. Local injection, limitation of motion for a few days usually get these patients back to work.

Cervical Spine

Fractures of the cervical spine usually are of the dislocation type although this is usually very difficult to demonstrate. Locked facet syndrome is noted. I refer you to Standard texts for methods of reduction of these manually. The whip lash injury, cervical discs, and wry neck all respond to conservative therapy in time. It is important to obtain routinely AP, lateral, and both oblique views in this region — in fact the PA is better than the AP. Odontoid views should routinely be included. One must be reasonably certain that the arms are pulled down and that C7 and T1 views are noted — especially in heavy, short necked people in which this area is routinely missed by most technicians.

We treat cervical fractures here with skeletal traction by means of Vinke tongs or Crutchfield tongs for a period of six weeks followed by a four poster type of cervical spine brace. Open reduction and fusion is done on those felt to be grossly unstable or where reduction cannot be done by traction and hyperextension methods. A total of three months immobilization is carried out before guarded flexion and extension films are obtained to check stability even in the fused cases where spinous processes have been wired.

Difference of Opinion

Treatment of fracture dislocation with obvious cord or cauda equina injuries has been left to last because there is so much difference in opinion here. I personally feel that where there is clinical evidence of a complete lesion one must base a decision to perform a decompression laminectomy wholely on the results of a good, careful lumbar puncture and Queckenstedt test as originally outlined by Coleman and Dowman.

One would necessarily miss an occasional case of splinter into the dura with cord compression not noticed on x-ray as we have seen within the past year at William Beaumont. The unnecessary shocking procedure of laminectomy to an already seriously injured person does not seem warranted as a routine procedure in all cases of paraplegia. When performed, this procedure should be done in the first 48 hours if maximum benefit is to be obtained even realizing delayed changes are noted.

Fractures of the pelvis consist of three main groups:

(1) Avulsion fractures due to muscular violence.

(2) Fractures and dislocations of the pelvic ring due to crushing trauma.

(3) Injuries of the sacrum and coccyx.

The first group is seen in young athletes where the rectus femoris avulses the anterior inferior iliac spine, sartorius avulses the anterior superior iliac spine or the hamstring avulses the ischial epiphyses. All respond to bed rest with hips flexed to place the involved musculature at rest.

Second Group

The second group most commonly results from trauma of automobile accidents. Where the involvement is of one ring only it is stable whereas when both rings on the same side we have a relatively unstable fracture. In either cast treatment consists of resting supine in bed for 6 weeks when stable and up to 12 weeks when unstable before ambulating. Displacement of concommitant sacro-iliac dislocations or subluxations are best treated by skeletal traction or well leg traction as one prefers.

One must always remember the possibility of bladder and urethral injuries where the pubic rami are fractured and symphasis separated and appropriate diagnostic measures and therapy instituted to prevent contamination and infection. Where the acetabulum is fractured, skeletal traction as in dislocated hip is indicated. For frank dislocation of os coxae without fracture, I refer you to the classical paper on this subject by Dr. W. N. Eggers, Galveston, Texas, as follows: Vol LXXXIII, No. 3, Mar 52, page 300-307 American Journal of Surgery.

Closure of symphasis diastasis when associated with

(Continued on Page 59)

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

November 15, 1956

FREDERICK P. BORNSTEIN, M. D. — EDITOR — CASE NO. 459

PRESENTATION OF CASE BY DR. WAYNE L. LORENTZEN

History — Dr. Nathan M. Kleban:

A 64 year old married retired railroad laborer was dead on arrival at the El Paso General Hospital emergency room on April 9, 1955.

Beginning in 1952 he had symptoms of exertional breathlessness, orthopnea, paroxysmal nocturnal dyspnea and swelling of the feet and ankles appeared and progressed. This train of events led to his first admission to the hospital in July, 1954.

In addition to the findings of cardiomegaly and decompensation there was a blood pressure of 150/50; a grade III harsh systolic murmur loudest over the primary aortic area, transmitted to the neck and apex; a grade II diastolic murmur heard over the primary and secondary aortic areas; pulses were bounding.

Laboratory:

Blood Kolmer and Kahn were positive, the latter 128 units. Spinal fluid protein was 25 mg. per cent, with no cells, a weakly positive Kolmer, and a gold curve of 0012210000. The X-ray film of the chest was reported as demonstrating pulmonary vascular congestion, a left pleural effusion, and cardiomegaly, particularly the left atrium and right ventricle, but including the left ventricle. First degree A-V block and left ventricular hypertrophy were interpreted on electrocardiogram. A cardiac consultant felt the patient had luetic aortic insufficiency with relative functional stenosis.

Procain penicillin in dosage of 600,000 units daily was administered for 10 days. On routine cardiac therapy he improved and was discharged.

Patient Readmitted

The patient was readmitted because of symptoms and signs of cardiac decompensation three weeks later, again in January, February and April, 1955. At the time of the fourth admission in February, 1955, the Kline test was negative, and the radiologist had made a diagnosis of hypertensive cardiovascular disease in interpreting the chest film.

In April, 1955, the patient's fifth and final admission to the El Paso General Hospital ward occurred because of difficult breathing. Temperature was 99.2, but normal thereafter. Heart rate was 96, rhythm regular, blood pressure range was 136-114 systolic, 50-28 diastolic.

Neck veins were distended; there was 3+ pitting edema up to the knees; the liver edge was felt 3 fingers-breadth below the right costal margin; the heart was enlarged to the 6th left intercostal space in the anterior axillary line. The second aortic sound was louder than the pulmonic. There was described a harsh systolic murmur and a short diastolic murmur, heard over the entire chest but loudest at the 6th ICS in the AAL.

Liver Enlarged

The liver was enlarged. Blood Kolmer and Kahn were again positive. X-ray of the chest was said to demonstrate enlargement of all chambers and widening of the thoracic aorta. Electrocardiogram was interpreted as demonstrating first degree A-V block and left ventricular hypertrophy.

Arm-to-tongue Decholin circulation time was 35 seconds. Treatment consisted of aminophylline, mercuhydrin, bed rest with feet elevated, low salt diet, diamox, digitoxin, and tetracycline. The patient was discharged improved on the 8th day, April 9 — to what extent was not stated.

The patient denied symptoms of rheumatic fever, evidence of or treatment for venereal disease prior to his first El Paso General Hospital admission, chest pain, syncope, hemoptysis.

Blood Counts Unremarkable

Routine blood counts were not remarkable. Trace to 1+ albumin was present in the urine on most admissions. Pyuria was reported at the time of his February, 1955 admission. A urinalysis report is not present on the chart of his final admission.

Circumstances which preceded his death on the day of discharge from the hospital are not revealed in his record.

Clinical Discussion —
Dr. Wayne L. Lorentzen:

In going over this history I think two points should be made as to what are probably the most important factors in the general history of this patient. I think it is important that he was a male, and that he was 62 years old when he first showed any signs of cardiac decompensation.

As far as we know he apparently never completely

got out of decompensation. The disease process was apparently slowly progressive with some periods of remission, but not complete ones.

From the time of July, 1954, until April of 1955 with his five admissions here, he certainly was not in the best compensation. On physical examination I think the important thing is that he had a low diastolic pressure and a moderate increase of the systolic pressure. The murmurs were described as being harsh Grade III systolic, in the aortic area which were transmitted up to and into the neck and also were heard at the apex.

Diastolic murmur was of less intensity and was Grade II. It was also heard in the aortic area and in the secondary aortic area. The only other important thing mentioned was the fact that he had a bounding pulse. There was no mention here as to whether he had a Durozier sign of capillary pulsations.

Significant Observation

In his laboratory findings I think the most significant observation is of course the fact that he had a positive Kahn and Kolmer. His spinal fluid showed only a slight positive Kolmer and the gold curve did show some change but I just don't know whether it is really significant, inasmuch as there were no symptoms referable to his central nervous system.

We also do not know in what manner or form he died. He died on the same day that he was discharged from the hospital. There are some things in his history and physical examination on his chart that aren't recorded here; I don't know whether they are of great importance or not.

For example, he had a pulse of around 60 when he came into the hospital; he usually had a pulse of around 90 or more than that, but as a rule he ran one around 60. In considering the possible etiologies I think it fairly evident that this patient had an aortic insufficiency.

Question of Aortic Stenosis

There was some question, and still is in my mind, as to whether he had an aortic stenosis also. The fact that he was up in his sixties at the time this occurred speaks somewhat against this being due to a rheumatic process. The two commonest causes of aortic insufficiency are rheumatic heart disease and syphilitic heart disease.

In rheumatic fever the aorta is primarily or firstly attacked in the region of the aortic ring, with consequent dilatation in many cases and production of an aortic insufficiency by that method. However, more commonly the rheumatic process attacks the cusps and there is either deformity or shortening of the cusps, producing the insufficiency.

This dilatation and insufficiency that you see when the aortic ring is involved will eventually end up as a very severe stenosis. This very frequently happens in the middle age group, principally because the stenosis is very gradual and the heart is able to compensate and many patients don't decompensate until they get into middle age.

Commissural Valvulitis

The syphilitic aortic insufficiency is primarily a commissural valvulitis. As the commissures become widened, an insufficiency is produced in that manner. A shortening of the cusps can also do it. Syphilis alone very seldom ever produces a stenosis. It usually has to be secondary to some calcification, otherwise it is rarely associated with stenosis.

Subacute bacterial endocarditis has to be considered; however, it is usually secondary to rheumatic fever but can be so prominent that it will be a factor. Vegetations from bacterial endocarditis can become large enough to prevent proper closure and produce insufficiency. This is a very unusual occurrence. More likely an aneurysm of one of the cusps is produced or an erosion of the vegetation on one of the cusps with resulting tear.

Aortic Insufficiency

Traumatic aortic insufficiency should be considered. This was a railroad worker. I don't know whether he worked up to the onset of his disease, but it is well known that a diseased valve with a marked stain of any kind, or a very heavy blow to the chest can produce a linear tear and an aortic insufficiency follows it.

We have no history to support that in this case. As a rule if there is trauma involved the patient has considerable chest pain. There also is a tear in the aorta besides the damage to the valve, and the patient goes downhill very rapidly.

Arteriosclerosis and hypertension can be considered as etiologies. They tend to occur more frequently together, rather than separately in producing an aortic insufficiency. The insufficiency that they produce, however, is more of a functional type. Very frequently there is no true valvular damage, but more of a dilatation of the aortic ring.

Dissecting Aneurysm

A dissecting aneurysm should be considered because it can involve the attachment of an aortic cusp or it may protrude in such a way that it will interfere with closure of the valve.

Congenital lesions are very unlikely, I believe, in this particular case. Practically all of the congenital lesions causing an aortic insufficiency involve a high septal defect. They may be associated with other defects also but the high septal defect tends to give little or no support to one of the medial cusps, and very frequently with the interventricular septal defects there will be a band of tissue that interferes with the proper closing of the valve.

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Further Considerations

There are some other things that probably should be considered because the patient had a very large pulse pressure, but they are very unlikely — such as aneurysm of the aorta perforating into either a pulmonary vessel or into the vena cava or even an atrium. As far as we know there is little to support that.

As to the immediate cause of this patient's death, I have very little to say because we have insufficient information. The fact that he had no history of a previous infarction speaks more or less against his having coronary disease, although it may have been present. He could have had an infarction.

In the hospital he had been treated for congestive failure and left after just eight days, so he may have had a fatal episode of pulmonary edema at home. He also could have thrown an embolus from his veins or one of the chambers of his heart.

X-ray Discussion — Dr. Vincent M. Ravel:

The first film that was taken on admission of the patient is a portable examination with the patient recumbent and in an A-P view, so observations were limited of course to an incomplete study. However, we pointed out that there was a decrease in the aeration of the lungs and there was a marked enlargement of the cardiac silhouette and obscuration of both costo-phrenic sulci, particularly on the right, which we felt probably was consistent with or due to an accompanying pleural effusion.

The second examination which we reported upon was done with the patient erect, P-A, and this is the one where it was pointed out we were supposed to have changed our etiological diagnosis. I really didn't make an etiological diagnosis on the first one, and on the evidence that we have here we felt that this was a cardiac enlargement, congestive failure, most probably on the basis of hypertensive cardiovascular disease.

Reason For Opinion

Now the reason we said this was because here we have a patient with congestive failure, with an enlarged heart, and without a significantly enlarged aorta, and on that basis we felt that this was probably secondary to hypertensive cardiovascular disease. The final examination again shows no significant increase in the size of the cardiac silhouette.

However, the obliques now help us a little bit in that we have posterior displacement of the barium-filled esophagus on the right oblique and a marked left ventricular enlargement and encroachment of the sternum in the right oblique again indicating right ventricular enlargement. These changes of course are certainly consistent with a rheumatic heart disease with a double lesion.

The fact that the patient had syphilis somewhat confuses the issue, but I do not see any widening of the aorta and I do not see any calcification in the ascending portion of the aorta which you frequently see with a syphilitic aortitis and an accompanying syphilitic aneurysm. From the radiographic standpoint, then, we have to consider this a rheumatic heart disease with probably a double lesion, aortic and mitral.

Dr. Lorentzen:

The EKG's showed mainly left ventricular hypertrophy and also a first degree A-V block. There were some ventricular premature beats. The rate in all of them was 70 or better. There is nothing in the chart to state whether the pulse was regular and whether there was a pulse deficit or not. I don't know how significant this pulse of 60 was which the patient tended to have when he was compensated.

The two most likely diagnoses are of course syphilis and rheumatic heart disease. However, if we are to believe everything that is on this chart, it makes it very difficult to come to a clear-cut conclusion. The best description undoubtedly in the chart was the one with the very first admission.

Careful Description

The individual who described it did it very carefully and I presume accurately. If there was a grade III harsh systolic murmur which was transmitted definitely up into the neck, it is most likely an organic type murmur. The increased systolic pressure of 150 tends to more or less discount the possibility of a stenosis. We also have to consider that this patient had a positive Kahn.

As I said before, if this is a syphilitic lesion it would be very unlikely to have a stenosis with it, unless there was some associated change, in the aorta, or some secondary calcification of the aortic valves, and I don't think we have any evidence of that on our X-ray.

Clinical Standpoint

From the clinical standpoint there was no good description of a murmur that would show that the mitral valve was involved. However, the radiologists felt that it probably was involved.

I think one thing should be mentioned here. Very frequently in the outset of a pure aortic regurgitation the patient will show a predominantly left ventricular hypertrophy on the X-ray and on physical examination. With failure and mitral insufficiency they can take on a fairly typical picture that would look like a rheumatic heart except that the left ventricle is probably a little larger than it should be with just a pure mitral lesion.

Another difficulty is that this first murmur from its description sounds like an organic stenosis. In his last admission they mention the fact that the second aortic sound was louder than the pulmonic. It is very rare to have such a loud second sound. As a rule the second sound is either absent or not very loud at all in an organic stenosis.

Insufficient Evidence

I have to hang my hat on some diagnosis and actually I don't think that we have enough evidence one way or another to really say 100 per cent but I do feel probably with the positive Kahn that this patient had a syphilitic heart lesion. This occurred when he was rather elderly, of course I have to take into consideration those rheumatic lesions which don't show up until middle age or later. I think the main lesion here is aortic insufficiency, etiology most likely syphilis.

Dr. M. C. Davidson:

Judging from the X-ray I am inclined to believe he had a double rheumatic lesion, mitral and aortic disease. Sudden death is known to be rather common in any aortic valvular disease so that would not be too difficult to explain. Also a pulmonary embolus is possibly the final episode in this man. I am a little doubtful of syphilitic disease, I simply cannot understand why the right ventricle is so big, that is my objection to the diagnosis of syphilitic aortic insufficiency.

Dr. Saul B. Appel:

I think that the description of the physical findings in this case are rather skimpy. The aortic valve is involved. With insufficiency we might get an Austin-Flint phenomenon at the apex which could simulate the murmur of mitral stenosis and throw us off. However, if the first apical sound were described adequately one might be able to evaluate the findings more adequately.

Now it was mentioned that the patient denied symptoms of rheumatic fever. Well, he also denied venereal disease. The history is notoriously unreliable at this age and in fact in our series of cases of rheumatic heart disease over the age of 60 we found that one-third had no history of previous rheumatic fever.

This was not merely due to their poor memory or senility. In a similar group of rheumatic hearts in women who were pregnant and in their twenties to thirties, one-third of them gave no history of rheumatic fever.

Normal Sinus Rhythm

The patient had a normal sinus rhythm throughout his course. That is certainly in favor of syphilis, that is, syphilitic heart disease, as opposed to rheumatic. Syphilitic heart disease is not usually associated with auricular fibrillation. Therefore, if we find a normal sinus rhythm in this patient, this is slight evidence in favor of syphilitic heart disease as opposed to rheumatic.

However, on the other hand, the incomplete block which was described on several EKG's makes it very tempting, at least to me, to think of aortic stenosis with erosion of the stenotic calcific valve through the septum, knocking out the A-V bundle, which not infrequently occurs.

Rheumatic Heart Disease

Now that, of course, would favor rheumatic heart disease. I am very sorry that fluroscopy of this heart was not described carefully because if there were any calcification in the aortic valve or in the mitral valve, a good fluroscopist such as we have here in this room would see the calcium wafting in the breeze. I suggest that the patient had heart disease and the etiology was rheumatic fever, inactive of course, plus syphilitic heart disease, plus probable arteriosclerotic heart disease, all three of them co-existent, with an enlarged heart, aortic stenosis, aortic insufficiency, mitral stenosis, mitral insufficiency, syphilitic aortitis, coronary sclerosis and myocardial fibrosis.

Clinical Diagnosis: Cardiac decompensation.

Dr. Lorentzen's Diagnosis:
Aortic insufficiency due to syphilis.

Pathological Diagnosis: Mitral stenosis and cardiac hypertrophy; syphilitic aortitis.

Pathological Discussion:
Dr. Frederick P. Bornstein:

The autopsy in this case was done with some difficulty because the patient died outside the hospital and all of the embalming had been done. The most impressive finding was the appearance of the heart which was considerably enlarged and weighed about 600 grams. The myocardium was hypertrophied.

The mitral leaflets were fused together, producing a mitral stenosis of the rheumatic type. The aortic valve was anatomically normal; however, a functional insufficiency due to dilatation of the aortic ring in such a hypertrophied heart is a possibility. The ascending aorta was markedly dilated and showed numerous irregular longitudinal scars quite characteristic of syphilis. This was borne out by the microscopic examination which showed the typical necrosis of the elastic fibers which is so characteristic of syphilitic aortitis.

Three Distinct Ways

In discussing syphilis of the cardiovascular system, I would like to point out that there are three distinct and separate ways in which syphilis can attack the heart. Firstly, the disease may attack the aortic valve, producing an aortic insufficiency; secondly, there may be a syphilitic aortitis as observed in this case; thirdly, there may be aneurysm of the aorta due to the syphilis. These processes can occur jointly or separately. In this case we are solely dealing with syphilitic aortitis.

In summary, then, we have again a case of cardiovascular disease with two distinct and separate processes, namely, an old rheumatic lesion with its consequences, and a syphilitic lesion. With the combination of the two, it is not too surprising that the patient developed bizarre and unusual symptoms.

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Lilly Suspends Clinical Trial of Carbutamide

Eli Lilly and Company has announced the suspension of the fifteen-month clinical trial of carbutamide, or BZ-55. Carbutamide is a sulfonamide derivative which controls many cases of diabetes when given by mouth.

"We deeply regret that this compound apparently does not meet the rigid requirements for a drug that must be taken throughout life. At the same time, we are grateful that the study of carbutamide was broad enough and thorough enough to uncover its limitations," a Lilly spokesman said.

The Post Polio . . .

(Continued from Page 50)

Conservative treatment is generally unsatisfactory.

Surgical treatment is generally satisfactory.

There are two elements to the deformity; the calcaneus deformity and the valgus deformity.

The calcaneus deformity is generally amenable to treatment by transplantation of muscles to replace the lost function of the triceps surae muscle group. The peroneals, tibialis posterior, flexor digitorum communis longus, the flexor hallucis longus, and in rare instances the tibialis anterior muscle may be used for transplants.

Combination Attack

The valgus deformity is attacked by a combination of a triple arthrodesis and muscle transplants of the foot. At the time the triple arthrodesis is done a wedge of bone should be removed from the inner side of the foot to correct the valgus deformity.

Green's operation as described by Grice in which a bone graft is placed in the sinus tarsae is useful in the treatment of the calcaneo-valgus foot.

It is important to realize that the calcaneus and valgus deformities although they may be analyzed separately are really integral parts of the same deformity. Their treatment is likewise closely linked together.

Deferred Transplantation

Muscle transplantation may be done at an early age. It should be deferred until 18 months or more after the acute attack of poliomyelitis.

It is the consensus of opinion that the triple arthrodesis operation should not be done before the age of eight.

For the last 10 years the author has stabilized the astragalo-scaphoid and subastragalar joints by means of large wires or small pins under direct vision at the time of operation before closing the incision. This technique was described originally by Dr. Guy Caldwell in 1943.

Some personal observations on the author's own cases are given.

Major Medical Insurance Called Key to Modern Health Economics

Major medical insurance was named the key to the problem of modern health care economics by James Andrews, Jr., Director of Health Insurance of the Life Insurance Association of America and Vice-Chairman of the Health Insurance Council before the Pennsylvania Medical Society at its recent annual meeting in Atlantic City, N. J.

Focussing attention on the radically new approach of Major medical coverage to the cost of treatment prescribed by a licensed physician, Mr. Andrews stated that the conventional forms of hospital, surgical and medical coverage were never designed to meet the needs of the long-term patient or the patient requiring a costly surgical procedure or extensive treatment by non-surgical specialists with out-of-hospital nursing care and expensive drugs. The new insurance, through its high benefit limits and its flexibility as to treatment was accomplishing all this and in the field of group insurance was extending its coverage to normal illness by means of a low deductible set to the earnings of the employee.

Benefits Up To $10,000

Major medical expense insurance provides benefits up to a maximum limit of $5,000, $7,500 or $10,000. It has two characteristic features, a deductible amount to eliminate payment of small bills and a co-insurance provision by which the insurance company pays 75 per cent, 80 per cent or more of the expenses of treatment up to the benefit limit of the insurance. As indicated in the recent survey of the Health Insurance Council, major medical showed an advance for the year 1955 of 138 per cent to lead all other forms of health insurance and to provide protection for more than 5.2 million people.

In summing up the coverage and its contribution to the adequate financing of voluntary health care Mr. Andrews said: "One of the most valuable aspects of major medical expense insurance is its flexibility. Just as medical practice has changed in the past decade, there is every likelihood that it will change in the next. By means of major medical expense insurance, protection is available which will keep pace with changing times. Major medical is designed to meet the cost of all types of service needed to restore the individual to health rather than being limited to a specific type of service, such as hospitalization or surgery. Thus, financial pressure to have one type of treatment rather than another, or to go to the hospital when hospitalization is not really needed, is largely eliminated."

Clinical Use Of . . .

(Continued from Page 32)

duction in the necessity for hospitalization, which results in more economical treatment for patients requiring a series of treatment.

Indications

Co^{60} teletherapy has proven its usefulness in all conditions, benign or malignant, located beneath the skin in which radiation treatment is indicated. It has been shown to be most useful in treatment of malignancies of the larynx, intraoral cavity, urinary bladder, lung, and oesophagus. It provides benefit to patients with cancer of the cervix and endometrium. Postoperative or palliative breast cancer treatment has proven beneficial. Palliative treatment in cases of inoperable or recurrent cancer of the rectum is showing promise.

Because of the reduction of undesirable side reactions, palliative treatment can be given to somewhat higher levels and in some patients previously considered to be eligible for palliative treatment only, an effort at permanent control will be possible.

Selectivity Needed

Not all patients should be treated with Co^{60} teletherapy. The radiologist must still select the modality of treatment, after evaluation of each patient, as has always been done in the past. The expected biologic behavior of the tumor, the presence or absence of metastases, the size and location of the tumor, and the general condition of the patient are factors which must be evaluated to determine the type of treatment to be used in each case.

Although Co^{60} teletherapy offers definite advantages, it is not expected to revolutionize the treatment of cancer. Co^{60} teletherapy has proven to be a useful new tool in the armamentarium of the radiologist in the effort to control cancer and provide palliation for those whose disease cannot be controlled.

Fractures Of The . . .

(Continued from Page 53)

fractures of the pubic rami is accomplished by sling suspension.

Buttocks Taped

Fractures of the sacrum can often be reduced by finger in the rectum. The buttocks should be taped together for compression for a few days and patient kept supine in bed. After 2-4 weeks patient may be ambulated, but will need a cushion to sit on such as a rubber doughnut. Without displacement a corset or sacro-iliac sling will suffice plus rubber doughnut to sit on.

Treatment of fracture or dislocation of the coccyx consists of reduction by digital finger when displaced. Rest in bed is usually necessary here and taping the buttocks as above may help or aggravate — trial only will tell. Hot sitz type baths 3-4 times daily initially will often be beneficial. In chronic cases postural exercises should be tried. In general, the treatment of coccygodynia by removal of coccyx should be reserved for selected cases.

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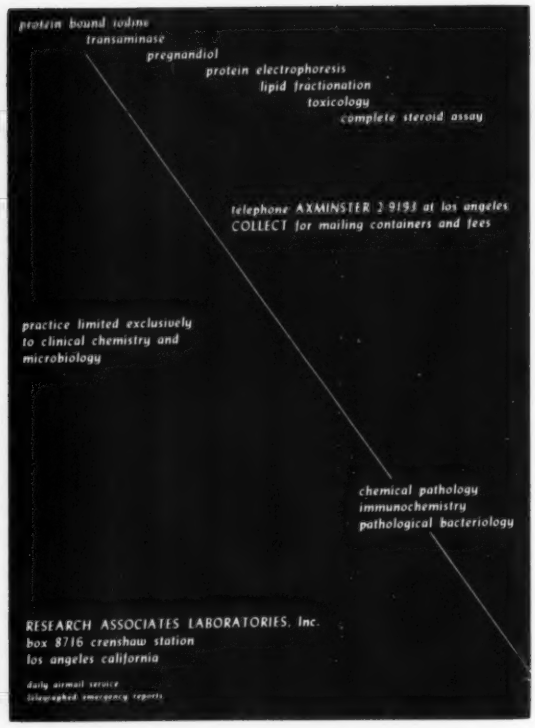

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